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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,034	09/15/2006	Keiko Shimamoto	47233-5007-00 (230642)	5739
55694 7590 08/02/2010 DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209			EXAMINER BARKER, MICHAEL P	
			ART UNIT 1626	PAPER NUMBER
			NOTIFICATION DATE 08/02/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/593,034	Applicant(s) SHIMAMOTO ET AL.	
	Examiner MICHAEL BARKER	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 10-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

By Applicant's amendments submitted 05/24/2010, claims 1-14 are pending in this Application, of which, claim 2 is currently amended. Claims 1-14 were previously rejected under 35 USC 103(a) and Obviousness-type Double Patenting.

Response to Remarks

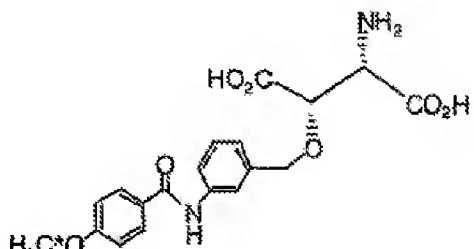
Applicant traverses the rejection of claims 1-14 under 35 USC 103(a) over WO 03/000698. Applicant states that of the eleven compounds cited from the '698 publication, compounds (1), (2), and (4) have substitutions at the ortho- and meta-positions of the benzoyl ring. (6.1, paragraph 3). Applicant's claims are drawn to substitutions only at the para-position. Additionally, Applicant points out compounds (1), (2), and (4) are not radiolabeled. Even excluding these compounds, the remaining eight compounds provide adequate basis to ground this rejection.

Applicant argues there is no suggestion to add a radiolabeled group to the para-position in particular over the ortho- or meta- positions. The '698 publication specifically teaches a radiolabeled group at the para-position of the benzoyl ring. There need be no suggestion to add a radiolabeled group to the para-position *over* another position. Instead, the '698 publication need only suggest making modifications to its structurally similar compounds to arrive at the claimed compounds, which it does. Even if the '698 publication states the strongest activity results from the meta-position of the benzoyl ring, it still plainly discloses compounds with a radiolabeled group at the para-position of the benzoyl ring, i.e., compounds claimed by Applicant.

The '698 publication teaches structurally similar compounds and provides a reason or motivation to modify these compounds to arrive at the claimed compounds. The compounds taught fall within the genus claimed by Applicant and would anticipate Applicant's claims but for the fact Applicant's compounds contain radioactive atoms. In other words, Applicant's claims teach known compounds with the addition of a radiolabel. The '698 publication discloses a valid reason or suggestion to modify the compounds provided at p. 13:

Some compounds of formula (1) are useful for radio-isotope labeled ligands for identification of transporter proteins. Isotope labeled ligands may be obtained by well known synthetic procedures, using the hydroxybenzoyl intermediate for R group in the formula (1) with the reaction, for example, of labeled methyl iodide to yield the desired labeled ligand as shown in Scheme 2. Some of the radio-isotope labeled methyl iodides are commercially available, including, deuterium-labeled methyl iodide, tritium-labeled methyl iodide, Carbon 14-labeled or Carbon 11-labeled methyl iodides.

As an example of a radiolabeled compound of formula (1), the '698 publication

notes the ligand shown in Scheme 2, . This ligand demonstrates a radiolabeled group at the para-position of the benzoyl ring.

Applicant states that claim 1 does not recite a radio-labeled methoxy-substituent but instead recites, “3) a straight or branched lower aliphatic alkoxy group”,

Scheme 2 of the '698 publication teaches preparing radio-labeled methoxy-substituent. The Office is reminded that claim 1 does not recite a radio-labeled methoxy-substituent. Instead, claim 1 recites, *inter alia*, the following radio-labeled substituents:

- 1) a straight or branched lower aliphatic alkyl group;
- 2) a hydroxyl group;
- 3) a straight or branched lower aliphatic alkoxy group;
- 4) an amino group;
- 5) a straight or branched lower aliphatic acylamido group;
- 6) a halogen atom; and
- 7) a straight or branched lower aliphatic haloalkyl group.

(Emphasis added).

Applicant appears to be stating that the language “lower aliphatic alkoxy group”, as claimed, does not include methoxy. However, at the paragraph bridging pp. 8 and 9, Applicant's Specification indicates lower aliphatic alkoxy group includes methoxy,

Examples of the radioactive atom possibly contained in the group X in the compound of the formula (1) include ^{125}I , ^{14}C , ^3H , ^{125}I , ^{18}F , ^{11}C , ^{13}N and ^{15}O . Specific examples of X having these atoms include methyl group, ethyl group, hydroxyl group, methoxy group, ethoxy group, amino group, acetamido group, halogen atoms, halomethyl groups, haloethyl groups and so on.

(Emphasis added).

Applicant then argues unexpected advantages at p. 4 of the Response. In doing so, Applicant focuses on the advantages of radiolabeling using ^{125}I . This narrow focus ignores the fact that claim 1 encompasses more radioactive atoms than ^{125}I alone. Nonetheless, the claimed advantages are stated as follows:

- 1) ^{125}I emits a gamma ray, which enables direct detection with brain imaging;
- 2) ^{125}I can be detected noninvasively in SPECT (single photon emission computed tomography); and
- 3) the binding activity of iodide-substitute ($\text{IC}_{50} = 4.8 \text{ nM}$) is higher than the methoxy-substituent ($\text{IC}_{50} = 12 \text{ nM}$).¹

The first two advantages listed are simply properties inherent to ^{125}I bestowed on any compound utilizing it as a radiolabel, and while they may be considered advantageous properties of ^{125}I , they are not unexpected results. The third advantage demonstrates an improvement in the binding activity of iodide at the para-position versus methoxy as taught in the '698 publication at Table 1. It is not clear, however, that this advantage represents unexpected results or that unexpected results alone would be dispositive of obviousness in this Application.

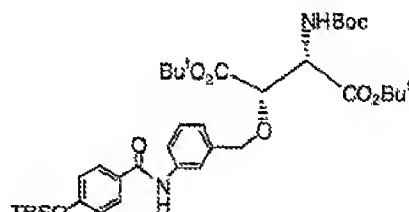
With regard to the limitation, "a tritium-containing ethyl group", in claim 10, the '698 publication does not teach a tritium containing ethyl group. Instead, the '698 publication discloses, *inter alia*, structurally similar compounds having an alkyl substituent at the benzoyl ring, along with a suggestion that certain of the disclosed compounds could be radiolabeled. This disclosure and suggestion do not render Applicant's claim 10 obvious. With regard to claim 10, this rejection is canceled.

At 6.2 of the Response, Applicant traverses the rejection of claim 9, and states "there is no teaching that would have led a skilled artisan to have identified and used

the claimed compounds to identify or characterize glutamate transporter proteins.” As discussed above, the ‘698 publication demonstrates structurally similar compounds, suggests modifying them by radiolabeling, and demonstrates a specific example modified by radiolabeling at the para-position of the benzoyl ring. Furthermore, as stated at pp. 6 and 7 of the Non-Final Office Action, “the ‘698 publication teaches that its radiolabeled ligands are useful for identification of transporter proteins which, as demonstrated throughout the publication, include glutamate transporter proteins.”

At 6.3 of the Response, Applicant traverses the rejection of claims 5, 6, 13, and 14. These arguments are persuasive, and this rejection is withdrawn over the process claims, 5, 6, 13, and 14.

At 6.4 of the Response, Applicant traverses the rejection of claims 3, 4, 11, and 12 and argues no reasoning was provided to reject these claims. Scheme 2 of the '698



publication recites the following compound: . Applicant's

definition of Y at pp. 10 and 11 of the Specification states that when Y is an organometallic group, it may include silicon. It is not clear from claim 3 that Y omits the possibility of the tert-butyldimethylsilyl group disclosed at Scheme 2 of the '698 publication.

In summary, the rejection under 35 USC 103(a) is withdrawn as against claims 4-6 and 10-14. Accordingly, claims 1-3 and 7-9 remain rejected under 35 USC 103(a).

At 7 of the Response, Applicant traverses the rejection over claims 1-14 over US 7247652. Applicant's arguments are persuasive, and this rejection is withdrawn.

Objections

Claims 4-6 and 10-14 are objected to as each claim depends from a rejected base claim.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 1626

Any questions about this Office Action may be directed toward Examiner Michael Barker at 571.272.0303. If, however, attempts to reach Mr. Barker are not successful, the Examiner's supervisor, Joseph McKane, may be reached at 571.272.0699.

/MICHAEL BARKER/
Examiner, Art Unit 1626

/Kamal A Saeed/

Primary Examiner, Art Unit 1626